Assessing the Medicare Shared Savings Program's effect on Medicare spending

6-A

ACO assignment in the Medicare Shared Savings Program: Tables

TABLE 6-A1	Primary care services used in Pre-step, Step 1, and Step 2	
Type of code or service	**Codes**	**Description**
Physician fee schedule	99201–99215 *New G code for outpatient clinic visits*	New and established office/outpatient E&M visits
	99304–99318	Initial and subsequent NF care, other NF, and NF day discharge *(Excluded if place of service is 31–SNF)*
	99324–99337, 99339, and 99340	Domiciliary, rest home, or custodial care services and care plan oversight
	99341–99350	Home services
	G0402 (Welcome to Medicare) G0438 (Initial annual wellness visit) G0439 (Subsequent annual wellness visit) *Transitional care management* *Expanded transitional care management* *Chronic care management*	Wellness visits, care coordination
FQHC/RHC	HCPCS: G0402, G0438, G0439 Revenue centers: 0521–0525	
CAH Method II	Same as physician fee schedule	Same as fee schedule
ETA hospitals	Same as physician fee schedule	Same as fee schedule

Note: E&M (evaluation and management), NF (nursing facility), SNF (skilled nursing facility), FQHC (federally qualified health center), RHC (rural health clinic), HCPCS (Healthcare Common Procedure Coding System), CAH (critical access hospital), ETA (Electing Teaching Amendment). In 2016, four codes were added to the list of primary care services: chronic care management, transitional care management (two codes) and the new code for hospital outpatient clinic visit. In 2017, primary care services no longer include NF visits (99304–99318) if the place of service code is Skilled Nursing Facility (POS = 31).

Source: Centers for Medicare & Medicaid Services. Financial and beneficiary assignment specifications Versions 3–6. https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/program-guidance-and-specifications.html.

TABLE
6-A2

All physician specialties used in Pre-step

Type of code or service	Description
Specialty	All MD/DO specialties on ACO participant list
FQHC/RHC	ACO physician providing FQHC/RHC services
CAH Method II	Same as fee schedule
ETA hospitals	Same as fee schedule

Note: MD (doctor of medicine), DO (doctor of osteopathy), ACO (accountable care organization), FQHC (federally qualified health center), RHC (rural health clinic), CAH (critical access hospital), ETA (Electing Teaching Amendment).

Source: Centers for Medicare & Medicaid Services. Financial and beneficiary assignment specifications Versions 3–6. https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/program-guidance-and-specifications.html.

TABLE 6-A3 Primary care clinicians used in Step 1

Type of code or service	Description
Specialty	General practice, family practice, internal medicine, geriatric medicine, pediatric medicine, *clinical nurse specialist, nurse practitioner, physician assistant*
FQHC/RHC	Attestation
CAH Method II	Same as fee schedule
ETA hospitals	Same as fee schedule

Note: FQHC (federally qualified health center), RHC (rural health clinic), CAH (critical access hospital), ETA (Electing Teaching Amendment). From 2011 to 2015, only primary care physicians (in the specialties of general practice, family practice, internal medicine, geriatric medicine, and pediatric medicine) were used in Step 1. Starting in 2016, Step 1 includes all accountable care organization primary care clinicians (primary care physician specialties plus nurse practitioners (NPs), physician assistants (PAs), and certified nurse specialists (CNSs). NPs, PAs, and CNSs are designated as primary care clinicians regardless of their true practicing specialty.

Source: Centers for Medicare & Medicaid Services. Financial and beneficiary assignment specifications Versions 3–6. https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/program-guidance-and-specifications.html.

TABLE
6-A4

ACO specialties used in Step 2

Type of code or service	Description
Specialty	*Cardiology, osteopathic manipulative medicine, neurology, OB/GYN, sports medicine, physical medicine and rehabilitation, psychiatry, geriatric psychiatry, pulmonary disease, nephrology, endocrinology, multispecialty clinic or group practice, addiction medicine, hematology, hematology/oncology, preventive medicine, neuropsychology, medical oncology, gynecology/oncology*
FQHC/RHC	ACO clinician attestation
CAH Method II	Same as fee schedule
ETA hospitals	Same as fee schedule

Note: ACO (accountable care organization), OB/GYN (obstetrics/gynecology), FQHC (federally qualified health center), RHC (rural health clinic), CAH (critical access hospital), ETA (Electing Teaching Amendment). From 2011 to 2015, all medical doctor/osteopath specialties, plus nurse practitioners (NPs), physician assistants (PAs), and certified nurse specialists (CNSs) were used in Step 2. Starting in 2016, only the physician specialties listed above were used in Step 2, and NPs, PAs, and CNSs were moved to Step 1.

Source: Centers for Medicare & Medicaid Services. Financial and beneficiary assignment specifications Versions 3–6. https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/program-guidance-and-specifications.html.

Estimate of MSSP savings relative to a counterfactual

Study population

We examined a constant cohort of 6 million beneficiaries eligible for assignment to accountable care organizations (ACOs)—continuously in fee-for-service Medicare with at least one annual evaluation and management (E&M) visit—from 2012 through 2016. We restricted our population to those who were alive and in the same urban market (as defined by a unique metropolitan statistical area within a state) at the beginning and end of the period. We also excluded beneficiaries who were in the Pioneer ACO program or only in the Medicare Shared Savings Program (MSSP) in 2012. In sensitivity analyses, we found similar results when expanding our study population—16 million beneficiaries total—when including (1) beneficiaries in nonurban markets with at least 500 ACO-assigned beneficiaries and (2) beneficiaries who were alive for less than 12 months in 2016. We followed CMS's definition of an E&M visit used for ACO assignment during the period, including E&M visits originating in a skilled nursing facility (SNF). While CMS's assignment algorithm no longer uses E&M visits in a SNF, we found that relatively few of the beneficiaries (1 percent in 2016) in our study population had E&M visits that were exclusively provided in a SNF.

Treatment and comparison groups

Estimating MSSP counterfactual savings relies on comparing the differential change in spending (i.e., difference-in-difference results) of an ACO treatment group and a non-ACO comparison group. However, the frequency of ACO assignment switching complicates the definition of treatment and comparison groups. To test whether estimates of MSSP counterfactual savings changed based on the frequency of assignment switchers, we analyzed three scenarios of ACO treatment and comparison groups: (1) beneficiaries ever assigned to an ACO compared with beneficiaries never assigned to an ACO, (2) beneficiaries assigned to an ACO in 2013 compared with beneficiaries not assigned to an ACO in 2013, and (3) beneficiaries assigned to an ACO in 2016 compared with beneficiaries not assigned to an ACO in 2016. The definition of treatment and comparison groups was similar to prior studies on MSSP savings and allowed us to understand the range of MSSP savings using a constant cohort of beneficiaries.

Statistical testing

For each of our three definitions of ACO treatment and comparison groups, we tested the differential change in spending by conducting varying sensitivity analyses. These analyses included (1) the difference in mean spending growth for beneficiaries relative to the 2016 average spending in their market, (2) mean spending growth differences relative to average spending for treatment and comparison groups combined from 2012 to 2016 with an adjustment for market-level propensity-score weighting based on ACO-assigned beneficiary characteristics in 2012, and (3) a difference-in-difference regression model estimating mean spending growth differences relative to average spending for treatment and comparison groups combined from 2012 to 2016 after propensity weighting and controlling for changes in beneficiary characteristics over time. The results of our regression models are reported in Table 6-B1.

We estimated market-level propensity scores to help ensure that baseline characteristics of the treatment and comparison groups were similar. The propensity score is the probability of a beneficiary being in an ACO in 2012 in a particular market given his or her characteristics. We estimated this probability using age, gender, race, institutional status, disability, Medicaid eligibility, dialysis status, prior enrollment in Medicare Advantage, and hierarchical condition category (HCC) score. To calculate a propensity weight, each beneficiary in the treatment group received a weight of 1, and each beneficiary in the comparison group received a weight of the propensity score divided by 1 minus the propensity score.

We used the propensity weight to estimate differential spending in two ways. First, we calculated a descriptive propensity-weighted average change in spending. Second, we propensity weighted the following difference-in-differences linear regression model to allow for changes in beneficiary and market characteristics over the 2012 to 2016 period: $(Y_{i,t,k,m}) = \beta_0 + \beta_1 ACO_k + \beta_2 Market_m \times Post_t + \beta_3 ACO\_Treatment_k \times Post_t + \beta_4 Covariates_{i,t}$. Y is annual spending for beneficiary i in year t attributed to ACO_k or the control group and residing in market m. ACO is a dummy variable representing being in the ACO treatment group. $Post$ is a dummy variable representing the post period. $Market \times Post$ adjusts for market-level differences of beneficiaries over the period. $ACO\_Treatment \times Post$ is

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TABLE
6-B1

MSSP estimated savings (or losses) between 2012 and 2016

			Percentage point difference in spending growth	
MSSP treatment group	**Comparison group**	**Method**	**2012 to 2016 (−savings or +losses)**	**2012 to 2016 annual average (−savings or +losses)**
Ever in an ACO	Never in an ACO	Mean difference in spending growth relative to market average	+2.0	+0.5
Ever in an ACO	Never in an ACO	Mean difference in growth after propensity weighting	+3.6	+0.9
Ever in an ACO	Never in an ACO	Propensity-weighted regression*	+2.5	+0.6
In an ACO in 2013	Not in an ACO in 2013	Mean difference in spending growth relative to market average	−2.0	−0.5
In an ACO in 2013	Not in an ACO in 2013	Mean difference in growth after propensity weighting	−1.3	−0.3
In an ACO in 2013	Not in an ACO in 2013	Propensity-weighted regression*	−1.7	−0.4
In an ACO in 2016	Not in an ACO in 2016	Mean difference in spending growth relative to market average	−4.8	−1.2
In an ACO in 2016	Not in an ACO in 2016	Mean difference in growth after propensity weighting	−4.3	−1.1
In an ACO in 2016	Not in an ACO in 2016	Propensity-weighted regression*	−3.8	−1.0

Note: MSSP (Medicare Shared Savings Program), ACO (accountable care organization). This analysis includes only beneficiaries who, for the entire 2012 to 2016 period, (1) were alive, (2) were enrolled in fee-for-service, (3) had an evaluation and management visit in every year, and (4) were in the same market in 2012 and 2016. Range of results indicates sensitivity analyses for different statistical comparisons and weighting. All results were significant at the 95 percent confidence interval level. Savings and losses did not account for shared savings payments or other costs of administering the MSSP. For all treatment and comparison groups, pre-trend changes in spending from 2011 to 2012 were not significantly different at the 95 percent confidence interval level.
*The regression models allowed hierarchical condition category (HCC) scores to change. A relatively high increase in HCC scores for ACO beneficiaries would cause expected spending to increase and result in an increase in our estimated ACO savings. In sensitivity analyses, we also ran models where the HCC score was held constant. The ACO savings were only slightly lower. Because HCC scores are based on prior year spending, changes in spending in 2016 would not be reflected in the 2016 HCC score.

Source: Analysis of Medicare claims and CMS ACO assignment from 2012 to 2016.

the differential change in spending between the treatment and comparison groups (i.e., estimate of MSSP savings). The covariates we used were identical to the covariates for the propensity weight but accounted for changes in HCC score, dialysis status, institutional status, and Medicaid status. We also included interaction terms for being assigned through a specialist clinician or SNF in the post period. Results from our descriptive statistics were directionally similar to results from our linear regression.

We used the preceding method to test the 2011 to 2012 pre-trend difference in spending between the treatment and comparison groups. In general, we found little difference between the pre-2013 trend (2011 to 2012) for those entering an ACO in 2013 and those not entering an ACO in 2013. The difference was not statistically significant.

The main point of Table 6-B1 is to show how the three methods of defining the treatment and comparison groups affect estimates of savings. We also see some differences in the magnitude of savings or losses depending on whether we are looking at unadjusted mean differences, propensity-weighted mean differences, or regression estimates with propensity weights. But generally, these differences in statistical testing are less important than the choice of how to define the treatment group. On net, it appears that the MSSP slightly reduced spending growth for those who were alive through 2016. We also examined performance among decedents and did not find savings. However, measuring savings for those who die is more difficult given that—under retrospective assignment—many people are dropped from assignment by not having outpatient-based clinic visits in the year of death. ■